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ORGANIZATIONAL CHANGE: A CASE STUDY IN
IMPLEMENTING A BREAST CANCER SCREENING CLINIC

A Graduate Management Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration
by
Major Patricia A. Hayes, AN
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ABSTRACT

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The project will describe the process involved in starting a new organizational element and the various steps required to activate the program. The information gleaned from this study translates into assistance for other facilities. As the Army faces downsizing, regionalization, fiscal constraints, and a

competitive and rapidly changing health care environment, it behooves us to study and share information. In an era of unprecedented demands, it is important to examine current processes, and seek tools for improvement in managing organizational change. As an organization that has focused primarily on acute and chronic health care, it is critical to examine our ability to provide preventive care and investigate its application into the current military health care system.

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INTRODUCTION

A. Conditions Which Prompted the Study

Madigan Army Medical Center (MAMC), located at Fort Lewis, Washington is a premier teaching hospital and tertiary-care referral center. It is the newest medical center in the U.S. Army inventory, dedicated on February 28, 1992. The 414-bed facility contains sophisticated technology within a 9-story nursing tower, a 3-story outpatient medical mall, and a 4-story support complex. One of eight Army medical centers, it is organized along traditional lines as depicted in Figure 1.

Insert Figure 1 about here

MAMC employs 3,000 personnel who care for approximately 118,000 active-duty military personnel, retirees and their dependents. According to recent figures from the hospital Resource Management Division, the medical center has an average daily inpatient census of 260 and treats approximately 3,000 outpatients each day. The hospital scope of care

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includes a vital Graduate Medical Education (GME) mission, including 18 Residency Training Programs and 11 Fellowship Programs. There is also an affiliation agreement between MAMC and the University of Washington for the exchange of teaching staff and clinical material.

MAMC is a tri-service referral facility for a five-state region, with significant regional tertiary care and oversight responsibilities including the Exceptional Family Member Program (EFMP), coordination of federal health activities through the establishment of the Puget Sound Federal Health Council, Base Realignment and Closure (BRAC) obligations for Central and Northern California, staff assistance visits, and medical support taskings from Health Services Command (HSC). As the regional medical center, MAMC personnel have an important obligation for continuous education and the coordination of many military and health care activities, along with the prospect of increasing responsibilities in the future as the Department of Defense downsizes.

Although there are active Preventive Medicine,

Surgery, Obstetrics and Gynecology (OB/GYN), and Oncology Departments at MAMC, there is not, nor has there ever been, an organized breast cancer screening program. Cancer statistics are alarmingly high, and the incidence of breast cancer in the United States is rising. Currently 1 in 8 women is expected to develop breast cancer in her lifetime, according to American Cancer Society figures. Breast cancer has become the second most common cause of cancer deaths among women, having been surpassed by lung cancer in the past decade (American Cancer Society, 1992). Clearly, the statistics warrant attention to the treatment of this disease process in the military medical setting.

According to 1993 Defense Enrollment Eligibility Reporting System (DEERS) demographic data, there are approximately 54,100 female beneficiaries within the Madigan catchment area. Over 41,000 of these are 18 years and older, and they are fairly evenly distributed among the age groups as seen in Figure 2.

Insert Figure 2 about here

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The current points of entry for women's health are the gynecology clinic, family practice clinic, adolescent clinic, and the troop medical clinics. The pilot breast cancer screening clinic is considered another women's health portal of entry. In addition to receiving acute care for various minor problems, a routine well woman exam is available in these areas. At a minimum, a routine female exam includes an abdominal and pelvic exam, a Pap smear, a rectal exam with Hemoccult test, a blood pressure measurement, a skin exam, and breast exam. The current women's health screening process is graphically represented in Figure 3.

Insert Figure 3 about here

It should be noted that a mammogram is not considered part of the routine exam, instead, mammographies are available to active duty and symptomatic or high risk women only. Approximately 20 symptomatic mammograms are performed each weekday at MAMC in addition to all active duty mammograms,

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totaling between 400-500 mammograms per month. The recent establishment of a pilot breast screening program for asymptomatic women has added 15-20 mammograms each Saturday for a total of an additional 60-80 mammograms each month. With current staffing, a mammogram can be scheduled within 2-4 weeks, or faster if the woman is symptomatic. The results get back to the physician within 1-4 weeks.

Because of limited capacity and excessive waiting times, dependents of active duty and retirees are encouraged to have their screening mammography done in the civilian sector using the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), Medicare, other health insurance, or personal funds. A list of American College of Radiology approved mammography facilities is handed out in Radiology to those women who don't "qualify" for an exam at MAMC. Approximately 5,000 of these information sheets were handed out last year. However, because of CHAMPUS deductibles and co-payments under CHAMPUS, it is doubtful if a significant number of patients receiving information sheets actually obtained mammograms.

There are a number of factors that prompted this study. A significant catalyst was the verbal commitment from hospital leadership that a breast cancer screening project is valuable. The Hospital Commander, Brigadier General Leslie M. Burger, identified his vision of ultimately establishing a comprehensive Madigan Cancer Institute (MCI) and regional center of excellence. The idea of a multidisciplinary approach to prevent, educate, diagnose, treat, and follow-up patients called for a need to build a program from the ground up. The women's health screening program was introduced as the initial phase of designing and implementing the MCI focus.

A move toward preventive health care is evident both in the civilian sector, and as an area of increasing emphasis in the Department of Defense. It is perceived as a pro-active stance towards cost avoidance and cost savings from the high-cost treatment of end-stage disease. As the toll taken by breast cancer continues unabated, screening programs are widely perceived to play a critical role to improve diagnosis and successful treatment (Mushlin & Fintor,

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1992). With increased national attention focused on women's health issues, concern for preventive health, a commitment from the commanding general, and a move toward innovative health delivery strategies, it seemed an ideal time to explore the issue of breast cancer screening at MAMC.

Dr. Charlene Holt, a Pediatric Oncologist with experience setting up cancer control and screening programs, was hired by the leadership at MAMC in May 1992 as Director of Cancer Control. Anticipating approximately \$500,000 from the alternate use of CHAMPUS funds project, the concept for a women's health program was examined. Preliminary planning outlined the introduction of a program with the ability to function within the current system to define high risk earlier, and expedite team care with a compassionate, high-touch focus.

Dr. Holt prepared to move MAMC towards achieving the breast cancer and preventive goals stipulated in Healthy People 2000, a broad-based initiative led by the U.S. Public Health Service to improve the health of Americans by emphasizing prevention. She also wanted

to make progress toward meeting key features of new Pentagon health care policies for women in accordance with guidance from the Defense Advisory Committee on Women in the Services (DACOWITS).

A further condition which prompted the study is an interest in the use of preventive services. While health promotion and disease prevention have been discussed as rational ways to decrease future health costs, health care providers have had a difficult time supplying cost-benefit and cost-avoidance data. Despite this difficulty, it seems presumable that we cannot afford to go into the next century without focused preventive services. Health promotion and disease prevention offer the best opportunity to reduce the portion of our resources spent to treat preventable illness and functional impairment (Mendez, 1992).

A second-degree family history of breast cancer is an important personal factor which also prompted the study. As a health care professional, I long to see an expansion of preventive medicine practices integrated into the Military Health Services System. It is noteworthy to gear a study towards the process of

organizational change, since our facilities are called upon to do business in creative and innovative ways, with new tools and fresh thinking.

This project is timely due to the very real financial constraints that exist in the health care environment today. The hospital refers all non-symptomatic women who request annual breast cancer screening out of the facility to receive a mammogram using CHAMPUS funds, so the development of a screening program can make a significant economic impact. As hospital commanders assume responsibility for both hospital and CHAMPUS funds, it is prudent to examine current processes and seek ways to provide efficient and effective services while containing costs within budgeted resources.

A well-organized breast cancer screening program can serve as a model for other facilities so that the Army Medical Department (AMEDD) can transition from an emphasis on chronic and acute health care towards comprehensive prevention and health promotion programs. This is in accordance with guidance from Dr. Enrique Mendez, Assistant Secretary of Defense for Health

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Affairs, who published 45 prioritized objectives for use in the implementation of the Coordinated Care Program (CCP). A fundamental component of the CCP is a scientifically based, quantifiable health promotion and disease prevention program (Mendez, 1992).

Finally, continuous change in the health care environment is a prominent factor that encouraged this study. Certainly today's change is unlike any ever confronted- it is more rapid, complex, turbulent, and more unpredictable than ever before (Steinburg, 1992). Change is all around us and the health care climate is undergoing scrutiny from many angles. The country's sobering economic circumstances call for accountability for the way the health care dollar is spent. Health care reform is important to the new political administration and to the consumers of health care. With public sensitivity and heightened awareness concerning the delivery of health care, combined with a new facility and leadership open to new ways of delivering health care, the idea of implementing a breast cancer screening program seemed of significant enough magnitude to warrant a research effort. The

introduction of a new order in providing preventive health care creates a paradigm shift worthy of study.

B. Statement of the Management Problem

Can a new organizational element be created, such as a breast cancer screening program, which cuts across organizational boundaries and changes the major programmatic thrust from acute care and medical intervention to one of prevention? What are the institutional impediments to a matrix organization and how can they be mitigated? Can organizational inertia be overcome while implementing a preventive program such as a breast cancer screening clinic?

C. Review of the Literature

Breast cancer and its treatment are rife with controversy, difficult choices, cost considerations, political interest, and litigation (Smith, 1993). Breast cancer is an emotional topic, and has been among the most studied types of cancer. The headlines point out that we're in the throes of a national breast-cancer epidemic, yet a full understanding of many aspects of the disease is still elusive (Kessler, 1992). During World War II, one in 20 women was

diagnosed with breast cancer and during the Vietnam era, one in 13 women developed the disease (Finn, 1992). Today, although sources vary, the incidence is said to be one in eight to ten women will develop the disease in their lifetime (Sienko et al., 1992).

Mammography, or soft tissue roentgenography of the breast, has been available since the first half of the 20th century; however, it was not until 1956 that the concept of mass radiologic screening of healthy women for the detection of early breast cancer was introduced (Dodd, 1987). Mammography now has two main diagnostic uses: first, to screen essentially healthy asymptomatic women; and second, to evaluate the breast tissue of women with symptoms such as breast pain, breast lumps, or nipple discharge (Hamwi, 1990). For years after landmark publications concluded that mammography was a safe screening procedure, and despite its obvious screening potential, mammography was used almost exclusively for the evaluation of clinically palpable breast masses (Freundlich, 1992).

In the early years, mammography was limited to the hospital practice of radiology, but later gradually

evolved into an office procedure (Freundlich, 1992). Today, the development of outpatient breast imaging centers and mobile screening mammography units has made screening for breast cancer more accessible. Massive public education efforts have contributed to an increase in the use of mammography and earlier detection of breast cancer. Since reductions in mortality depend on increasing the adoption of early detection methods by physicians and by women, numerous professional organizations have endorsed screening guidelines for periodic clinical breast examination and mammography (Zapka et al., 1992).

Many differences of opinion have surfaced in the areas of detection, diagnosis, and treatment of breast cancer. Some authors argue that it is not cost effective to screen all women over 35 years of age, and other investigators suggest strategies that restrict screening to women with identifiable risk factors for breast cancer (Vogel et al., 1990). Some authors suggest two-view rather than single-view mammography (Shapiro, 1990). Although debate continues over both the age at which screening should begin and the

frequency of screening, the literature describes a widespread consensus that routine mammography is a basic, essential element of health care for adult women (Clark, 1992).

The primary purpose of screening asymptomatic, healthy women for breast cancer is to diagnose breast cancer earlier and thus reduce the risk of or delay the onset of death from the disease. Clearly, the majority of cancer patients show significantly higher survival if their disease is detected early. The optimum time for detection at the most curable stage may be before the lesion is palpable by a woman or a physician. Such a cancer may be detectable only in mass screening (Strax, 1989). The gravity of the combination of self breast exam, plus clinical examination and mammography cannot be understated. The literature recognizes that all three elements must be used in concert to provide comprehensive care.

Mammography is the only modality with the potential for detecting a breast cancer while it is non-palpable and at a stage of high curability (Hamwi, 1990). For breast cancer, both the means to identify the disease

and treatment regimens are available to cure patients or significantly prolong their lives (Sondik, 1992). Yet tragically, many women die despite compelling evidence that screening mammography provides an opportunity to detect cancers at an early stage, when chances for survival are improved. Very early detection of breast cancer increases the probability of surviving the disease, and of avoiding the physical and emotional trauma associated with more drastic forms of treatment, such as mastectomy (Reynolds et al., 1990).

The topic of breast cancer has consumed increasing amounts of media and journal attention. A wealth of articles attest to a long overdue but rising interest in women's health as a public health concern on the part of those who conduct research and make policy (Rodriguez-Trias, 1992). Two major barriers to the widespread use of screening mammography include high cost and limited accessibility (Monsees & Destouet, 1992).

The literature is replete with examples of well-established, successful civilian breast cancer screening programs. As described in Oncology (1992),

Duke University Medical Center in Durham, North Carolina, opened a comprehensive women's cancer screening clinic designed to provide one-stop risk assessment, screening, and education on the five cancers that affect women most- breast, cervical, colorectal, lung, and ovarian. Other successful programs include Mammography at Moffitt, introduced in 1990 which offers low cost screening mammograms to women at the H. Lee Moffitt Cancer Center & Research Institute at the University of South Florida in Tampa, Florida.

Risk factors for breast cancer can broadly be classified as personal or environmental in origin. Personal risk factors for breast cancer include an affluent socioeconomic status, caucasian race, nulliparity, late age of first childbirth, first-degree relative with breast cancer, and previous history of breast, endometrial, or ovarian cancer (Mettlin, 1992). Environmental risk factors for breast cancer include prolonged use of exogenous estrogens, excessive consumption of fat and calories, daily consumption of alcohol, and high-dose exposure to radiation (Mettlin,

1992). The majority of women diagnosed with breast cancer have no risk factors, so all women must be considered at risk, which emphasizes the need for screening mammographies. Like a tornado, breast cancer can sweep through generations, wiping out entire clusters of female relatives in its path (Finn, 1992). More attention to the disease is warranted as the incidence of breast cancer creeps higher.

The cancer-control objectives mandated in Healthy People 2000, emphasize three main goals. These include increasing the span of healthy life, reducing health disparities, and achieving access to preventive services (Wesbury, 1991). The breast cancer objectives for the year 2000, and accentuated in the CCP by the Assistant Secretary for Health Affairs, are very ambitious.

Key clinical objectives of the CCP include an increase of the proportion of women aged 40 and older who have ever received a clinical breast examination and a mammogram to 80%; and an increase to 60% of those aged 50 and older who have received a mammogram within the preceding one to two years (Mendez, 1992).

Additionally, the guidance calls for a reduction in breast cancer deaths to no more than 20.6 per 100,000, and an increase to at least 75% of primary care providers who routinely counsel patients about tobacco use cessation, diet modification, and cancer screening recommendations (Mendez, 1992). Clearly, the goals of a breast cancer screening program at MAMC correspond with these goals in coordinating and providing optimal care to the beneficiary population.

Charges for mammography vary widely, from \$25 to more than \$200 (Eddy et al., 1988). Whether the cost of population screening is justifiable is contested in the literature. There is a dearth of studies with information on the costs involved with breast cancer screening, but the methodologies used are sometimes complex and incompletely described, thus difficult to interpret (Mushlin & Fintor, 1992). Bird (1989) found out that high quality mammography at 42 patients per day can be completed for \$28 per examination, a cost that includes the professional fee. The cost of screening, including ancillary procedures and biopsy, must be compared with the cost of caring for patients

with metastatic breast disease (Freundlich, 1992).

Third party payers have been reluctant to cover screening mammography; however, when the mass has become palpable and the primary role of mammography is no longer applicable, third party payers have been willing to cover the expense (Freundlich, 1992).

Mass screening has been proposed as the only feasible approach to offering screening at low cost (Clark, 1992). Generally, the literature recommends annual screening for women older than 50 years of age, and that women aged 40 to 49 be screened every year or two (Moskowitz, 1992). Surprisingly, few studies have addressed women's perceptions of incentives or deterrents to screening mammography (Glockner et al., 1992). Studies recognize that the number of women who get regular mammographies varies with culture, income, and level of education.

Early studies described radiation as a risk of mammography; however, current literature concludes that radiation is no longer considered a significant hazard (Taplin et al., 1990). There has been considerable improvement over earlier radiographic techniques

including a significant reduction in radiation dose and considerable improvement in diagnostic image quality (Hamwi, 1990).

For most of this century, the American health care system has been organized around acute illness, but changes in the next 15 years will demolish what remains of the acute-care paradigm (Goldsmith, 1992). Cancer care in the 1990's will be characterized by incremental advances in detection, more effective multidisciplinary treatment approaches, and new insights into cancer prevention (American Hospital Association, 1991). The paradigm of diagnosis and treatment will be replaced by one of prediction and early-stage management of illness, rendering much of the current diagnostic and curative technology obsolete (Goldsmith, 1992). While the long-standing acute-care model was based on the fundamental unpredictability of disease, society must confront the increased predictability of disease risk (Goldsmith, 1992). This paradigm shift creates a significant challenge to health care providers in the military health setting.

Organizational structures have their origins in

military and church organizations, characterized by the hierarchial form. Historically, two major organizational structures have dominated industry, functional and divisional, but in the past two decades a mixed form, the matrix, has found increasing use (Straub & Latchaw, 1988). The identifying feature of a matrix organization is that there is a dual rather than single chain of command. From a restricted beginning in the aerospace industry, matrix applications have proliferated and flourished in financial institutions, hospitals, government, and educational institutions (Kolodny, 1979). It is designed for organizations involved in a variety of simultaneous projects and major activities (Boissoneau et al., 1984).

A major criticism of the matrix organization is that the use of both vertical and horizontal management violates the unity-of-command principle. Yet this problem already exists in a hospital setting because of the dual authority of the administration and medical staff. Without being so labeled, the matrix organization has been utilized in American hospitals for at least 20 years, primarily as an effort by

hospital administrators to be responsive to physicians' needs (Boissoneau et al., 1984).

Research efforts exist in the literature discussing the feasibility of establishing breast screening programs in both the private and public sector. However, there is nothing in the literature on the effects of organizational change during the development of a breast cancer screening clinic in a matrix organization.

There is an abundance of information in the literature relating to the problems and benefits of matrix organizations, especially describing early trials in industry. Much has been written about matrix management since its implementation in the aerospace industry during the late 1950's and early 1960's (Burns, 1989). Besides the difficulties inherent in a dual chain of command, some reported problems of a matrix organization include tendencies toward anarchy, power struggles, group decision making, high costs, and uncontrolled layering (Davis & Lawrence, 1978).

A hospital environment is a very complex system comprised of many stakeholders with various interests

and concerns. A recent study revealed that a typical hospital is more than 2,000 percent more structurally complex than a business or manufacturing organization (Murphy, 1993). In addition, a military hospital has many competing elements including external demands, a readiness mission, a transient workforce, short-term versus long-term goals, and various civilian workforce systems.

While there is undeniable control and predictability within the confines of a hospital, there is a significant amount of uncertainty and unpredictability. In this atmosphere, teamwork isn't a luxury, it is an absolute necessity to break down the barriers at work that threaten to create operational chaos (Murphy, 1993). An extensive network of lateral communication and horizontal interactions is key to process the large amounts of information in this complex institution.

There are inferences and recommendations from many different types of mammography screening studies available in the literature. Various studies include media-based screening programs, mobile van

screening programs, and telephonic follow-up studies of breast screening programs. There is research from programs operating in different environments including urban, private practice, and community settings. Surprisingly, there are no studies available in the literature involving a breast cancer screening program in a government facility. Not all studies address the element of cost, although it is a key element in planning a screening program. The trend seems to be toward the inclusion of a financial analysis, especially since it is a dynamic process that requires reappraisal on a regular basis (Monsees & Destouet, 1992).

Several studies have shown the effectiveness of breast cancer screening in reducing mortality from breast cancer. Two frequently cited studies in the literature are the Health Insurance Plan (HIP) and the Breast Cancer Detection and Demonstration Project (BCDDP). In 1963, the HIP of Greater New York Study coupled mammography with breast physical examination in a randomized clinical trial compared with controls who did not receive intensive screening. The results for

women over age 50 were impressive in that screening decreased mortality by more than 50% at 5 years (Oddone et al., 1992). However, the study excluded women over 65 years of age.

In 1973, the BCDDP was organized and screened more than 280,000 women with a combination of mammography and physical breast examination between 1973 and 1981 (Eddy et al., 1988). It was based on the earlier HIP results as well as technical improvements in mammography. Despite the absence of a control population, the results of the study are valuable. Mammography alone was responsible for the detection of 41.6% of the 3557 cancers diagnosed in 280,000 women (Dodd, 1987). The comparable figure in the HIP study was 33.3% (Dodd, 1987). Both trials indicate that non-palpable cancers evaluated as a separate group show improved mortality (Freundlich, 1992). Figure 4 identifies a summary of key mammography screening studies. It clearly demonstrates that screening programs have been successful at detecting breast cancers.

Since there is no nationwide cancer registry, it is

perplexing to determine precisely how many new cases of cancer are diagnosed each year. The American Cancer Society estimates cancer incidence for the upcoming year using the best available data sources. In 1973, the National Cancer Institute began the Surveillance, Epidemiology and End Results (SEER) Program to collect continuing data on cancer incidence and patient survival. This program includes data from nine population based cancer registries, covering approximately ten percent of the United States population (American Cancer Society, 1992). Since 1979, American Cancer Society cancer incidence estimates are based on incidence rates from the SEER program which are applied to United States Census estimates.

Breast cancer incidence rates have increased about 3% a year since 1980, going from 84.8 per 100,000 in 1980 to 109.5 in 1988 (American Cancer Society, 1992). Some of this increase is believed to be a result of screening programs detecting tumors before they become clinically apparent, and other reasons are not fully understood. A meta-analysis of several mammography

screening studies is shown in Figure 4, including the number of cancer cases detected per 1000 women screened.

Meta-analysis is particularly useful when results from several studies have demonstrated varying results in magnitude or direction of effect, when sample sizes are individually too small to detect an effect and to label it statistically significant, or when a large trial is too costly and time-consuming to perform (Sood, 1991). One limitation of meta-analysis is that it does not consider the effects of confounding, but in this case the methodology provides a succinct summary of several important studies to assist in the analysis process.

Insert Figure 4 about here

A paradigm is any set of rules and regulations, not necessarily written, that establish boundaries and tell how successful behavior is accomplished within the boundaries (Flower, 1991). There is a rigid acute care paradigm in the practice of military medicine that is

being challenged with the introduction of a new organizational mindset pertaining to prevention.

The great paradox of a shift to a new paradigm is that it is not rational and can not be proven before it is tried (Flower, 1991). This is frightening for some people and thus they may resist change. When a paradigm shifts, everybody goes back to ground zero in that all the investments in position, power, expertise, and credibility disappear (Flower, 1991). New paradigms put everyone practicing the old paradigm at great risk, and the higher one's position, the greater the risk (Barker, 1989). Therefore, paradigm shifters are usually outsiders who come from the fringes, not the center of the prevailing paradigm community (Barker, 1989).

Our society has evolved into a litigious and complicated environment. This is true in the health care arena where a delay in diagnosis is the most common malpractice allegation in claims involving breast cancer (Washington State Medical Association, 1993). A 20-year review of all cases that came to a jury trial involving breast cancer in the United States

federal and state civil court system found that many cases of delayed diagnosis occur among younger women (Sandroff, 1992). It makes fiscal sense to assess the current system utilized for diagnosing breast cancer and look into avenues for improvement.

D. Purpose of the Study

The purpose of this study was to determine how to implement a preventive program that has not previously existed within this organization. The focus was designing, implementing, and installing a breast cancer screening program at MAMC and citing the processes required to achieve a successful outcome.

II. METHODS AND PROCEDURES

The persons, objects and events studied and assessed included key personnel and processes involved in starting a women's health screening program. This included interviews and conversations with physicians, nurses, technicians, and clerical personnel from Radiology, OB/GYN, Hematology/Oncology, Preventive Medicine, Surgery, and Pathology. I also communicated with the Chief of the Coordinated Care Division and Chief of the Utilization Management Branch, who are

responsible for assessing current hospital operations and assisting in managing patient care in a more efficient and cost-effective manner. I informed the Director of Cancer Control of my plan to study the process of getting the clinic organized and functioning, and worked closely with her as plans progressed. I attended monthly Tumor Registry and Cancer Committee meetings and pilot program organizational meetings.

While not conducive to quantitative analysis, the study lends itself to the examination of organizational change. Since no change occurs in isolation, the process of organizing a breast cancer screening clinic affected the whole organization. In starting this program, a committed nucleus emerged, but the challenge was to engage other elements into a level of commitment to the project. This involves overcoming organizational inertia, resolving personnel and resource issues, assessment of the organizational readiness for change, and facing the political dynamics inherent in a bureaucratic organization.

Six women were referred to the pilot clinic

randomly each week when they contacted the OB/GYN clinic telephonically, inquired about mammography screening, and conformed to certain criteria. These included a mammography request in an asymptomatic woman age 35 or older with no prior history of a breast biopsy, palpable breast lump, or family history of breast cancer. Since the pilot project started out on a small scale, there was no advertising or marketing of the pilot program to the public.

As a participant in this program, women were informed that they would receive a pap and pelvic exam, breast exam, instruction on breast self exam (BSE) through both video and demonstration, referral for a mammogram, stool hemoccult, and a cancer risk assessment with counseling. They were told they would be part of a pilot program to assess women's cancer risk factors and the program offered more than the annual Pap smear and breast examination. As a result of a Radiology initiative, a technician was hired to do mammographies on Saturday since weekdays are scheduled with women needing symptomatic mammographies and active duty mammographies.

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Since only six women were evaluated each week in the Wednesday clinic by a single practitioner, 2 additional health care providers were authorized to refer women for a mammography on Saturday in order to fill the 20 appointment slots. These included a contract physician and a Nurse Practitioner.

It takes a woman between 1-2 hours to complete the education and physical evaluation assessment at the Wednesday afternoon clinic. The project staffing consists of the Director of Cancer Control, two volunteers (a retired Registered Nurse and a post-mastectomy patient), a nurse educator, and a Licensed Practical Nurse from the OB/GYN clinic. The location of the clinic was based on where it could operate without constraining other occupants and a location where there was the necessary equipment and supplies. The OB/GYN clinic is utilized on Wednesday afternoons between 12:00 p.m. and 2:00 p.m. because this has historically been a slower time when a majority of physicians are in surgery and there is less clinic activity. Also, this location has a classroom which is used as an intake area where women receive personalized

instruction and view a 12-minute film prior to the physical examination by the physician.

Upon arrival to the clinic, participants are asked to fill out a health risk questionnaire in order to assess their risk for breast, cervical, endometrial, skin, and lung cancer. They are also questioned and assessed for individual teaching needs. The results and implications of the questionnaire are discussed with the patient and referral to existing lifestyle management education classes, such as nutritional education or smoking cessation, is addressed. Educational films and literature to share with patients are acquired from various sources including the American Cancer Society, the National Cancer Institute, and other resources.

A proposal for a Cancer Detection Alternate Use of CHAMPUS Funds Project was sent to Health Services Command with a projected savings or cost avoidance of \$388,343. The project proposed to establish an Early Cancer Detection Program (ECDP), to be incorporated into the incentive package for enrollment in the GATEWAY TO CARE (GTC) program at MAMC. An estimated

CHAMPUS recapture of \$871,226 was proposed and a funding level of \$473,000 was approved in January 1992 provided additional information was received and accepted. Upon receipt of the MAMC Business Plan, HSC requested further information regarding the ECDP in September 1992, stating the program was overestimated and overfunded based on the provided data. Additional information was provided to HSC pertaining to the current status of Women's Health Care and submitted in March 1993. The institution is eagerly awaiting news concerning the status of the approved funds.

As a result of planning and organizing this multifaceted project, an internal look at the present mammogram system was essential. This system is shown in Figure 5.

Insert Figure 5 about here

The organization of a comprehensive model for breast cancer screening had been a frustration to the OB/GYN Department, and was identified as a Quality Assurance issue in 1991. There are several dilemmas

with the current system including the uncertainty associated with asymptomatic mammograms completed in the civilian sector. There is no follow-up to ascertain if the exam was actually completed by a civilian practitioner and if so, what the quality of the exam was. There is uncertainty about any definitive care provided and if a copy of the report was distributed. Also, the cost to the patient varies and there is a CHAMPUS deductible of \$150. There is also a cost to the institution in terms of patient satisfaction and medical-legal implications, such as a delay and/or failure to make a diagnosis.

The process of getting this clinic functioning has been long and arduous. In an effort such as this, detailed and lengthy negotiations are necessary to achieve buy-in from program participants. Despite command emphasis, true commitment cannot be legislated to take effect immediately. The buy-in from various constituents took a long time, and progress was made in small increments. Through the traumas and pitfalls of this process, the allegiance of the complete team took approximately one year.

III. RESULTS

A pilot women's health screening program was started on December 9, 1992 with the first asymptomatic mammograms completed on December 12, 1992. The project started as a weekly Wednesday clinic where six asymptomatic women were evaluated, educated, and referred for a screening mammography the following Saturday. Ideally, the plan was to have the assessment module and the screening mammogram done on the same day, but this was impossible given the current staffing situation and workload.

A total of 294 women, ages 34 to 71, received a mammogram utilizing the Saturday appointments between December 12, 1992 and March 27, 1993. A total of 71 women were evaluated in the Wednesday clinic, of which 66 had a Saturday screening mammography as part of the pilot study. Since one patient with cancer was detected through the pilot program, the detection rate is 15.15 per 1000 screened using a 1 in 66 computation, or 14.705 with 1 cancer detected out of 68 women with mammogram appointments. Figure 4 identifies a summary of key mammography screening studies and the cancer

detection rates per 1000 women screened. The pilot program detection rates fall between the meta-analysis detection rates of 2.3 to 18.3 cases detected per 1000 women screened.

Pilot program participants were asked to fill out an exit survey to assess the pilot program after the initial Wednesday visit. Pilot study personnel were very interested in achieving customer satisfaction and expanding and improving the program. The exit summary asked women to briefly comment on the length of the health questionnaire, the effectiveness of the teaching, and add any additional observations.

The pilot project continues to function with the assessment of six women each Wednesday with referral for screening mammographies as appropriate. Further expansion is unlikely at this point under the current resource structure.

IV. DISCUSSION

An attempt at organizational change of this magnitude demands colossal commitment, coordination, and communication. The process of implementing the breast cancer screening clinic traversed hospital

organizational lines, services, and departments. Unfortunately, personnel in our system are sometimes uncomfortable looking at things in new ways. A project of this type calls for evaporating some long-standing boundaries, which takes time and a willingness to change.

While prevention sounds like a worthwhile endeavor, it demands adequate resources for success. A paradigm shift of this magnitude is unprecedented. Any change in corporate culture takes time, energy, and education to accomplish new goals.

Major findings from this project include the obvious difficulty in coordinating and communicating across all channels, both formal and informal. Commitment and support are pivotal to success. An attitude of indifference and organizational inertia was encountered at various junctions. From the outset, there was some discord that all areas did not have input into the direction the project would proceed. For example, some members of the Department of Surgery perceived that their counsel was overlooked at the beginning of this vast undertaking and this caused lost

ground in developing momentum at the beginning of the project.

Resistance to change was inevitable as a new way of providing health care was attempted in spite of a well-established medical model. The multi-disciplinary horizontal team approach necessary for the total MCI project cuts across a system organized with a vertical hierarchy in place. The U.S. Army has had a long tradition of military medicine based in the care of acutely ill patients, and this was a departure from the status quo. There is much time and energy necessary to preserve the status quo, which may leave little time or desire for orchestrating change.

The initial coordination of the effort was seen by some as impossible given the current level of resources. It is essential to have commitment from all key factions in order to successfully establish this type of multi-disciplinary undertaking. Specifically, team members requested clerical assistance and assistance with data management. With the current resources, the infrastructure is not able to keep up with the explosion of technology and public interest.

There was an element of internal disapproval in having an outside practitioner placed in the lead position to guide this endeavor. As a command-directed effort, it took a significant amount of time for the civilian director to establish credibility and assist with team-building in order to make progress. There was also concern about the pediatric background of the Director of Cancer Control, and varied opinions concerning the placement of this person to direct an initially adult-focused preventive program. In fact, Dr. Holt served on the National Cancer Institutes Cancer Control Advisory Board for three years and helped to develop state and national programs in cancer control.

Initial funding of approximately \$500,000 was projected for the project from the alternate use of CHAMPUS funds program. However, these funds did not become available, and the project developed and grew only through the use of volunteers and the redistribution of internal resources. One year after hiring a lead agent for this project, no tangible funding was available. This project cannot be expected

to continue to rely totally on temporary and borrowed assets and there is little hope for expansion of the program until resources are obtained.

There was a close correlation between the number of women who completed part one of the screening clinic (71) and those who returned for a Saturday mammogram (66), which suggests a concerned and motivated population. Most program participants had mammograms on Saturday, but several women had physical findings requiring immediate mammography so they did not utilize a Saturday screening appointment. There was difficulty initially in getting adequate referral of patients to the clinic. Several symptomatic women were erroneously sent to the pilot program and upon assessment, required a more immediate, symptomatic mammogram, rather than a screening mammogram.

In assessing why 5 women did not complete both the Wednesday and Saturday portions of the program, several different reasons were found. One woman elected to seek care utilizing a civilian physician and cancelled her appointment to the Wednesday program; two women had mammograms within the past year so were not referred

for a mammogram by the Wednesday clinic physician; and two women have their paperwork for a mammogram but have not made appointments yet.

To date, the pilot program has been well-received by patients. A review of exit surveys given to participants revealed thankful reactions to the initial phase of the pilot program. Women appreciated the caring attitude displayed, and the information presented. A new questionnaire is being developed, with an easy format consisting of circling answers plus space for additional comments. It is also important to survey staff participants in order to improve the current operation to best serve all customers.

A few negative comments on the exit surveys concerned proper use of the video machine and starting the class on time. On several occasions, OB/GYN personnel were having staff meetings in the conference room, which delayed a prompt start for the educational component of the pilot project. The importance of close coordination between pilot project personnel and the clinic personnel cannot be understated.

One difficulty encountered was that the clinic was

proposed as an asymptomatic women's clinic. However, in reality the participants sometimes wanted complete health care performed such as refills for prescriptions and assessment of other problems. This created difficulties, especially with only one physician present in the Wednesday clinic. The clinic clientele was more complicated than anticipated and this resulted in generating a number of consults.

Space is always a key and political aspect of hospital operations, especially at MAMC where additional residency programs and physicians were received as part of BRAC decisions. Initially, finding space for the pilot clinic was a problem, and finally suitable space for the project was found in the OB/GYN clinic. The Director of Cancer Control also had an office change mid-way through the year and now resides within proximity to the Tumor Registry office.

Occupying space that is assigned to other personnel can inherently cause difficulties. The pilot clinic personnel have had to be flexible and coordinate with the regular occupants of the clinic. They have had some difficulty maintaining paperwork and records due

to functioning in a borrowed area. The Wednesday clinic has moved twice within the OB/GYN clinic, and they have just one drawer in a desk to keep their records.

At the beginning of the project, various practitioners not involved with the pilot study, began sending patients for Saturday mammograms. The availability of a Saturday mammography technician was used erroneously by some practitioners who were unaware of the pilot project mission. This meant that some Wednesday clinic patients were not able to get seen the Saturday following their Wednesday appointment. This required revising the pilot clinic referral pattern and communicating it through proper channels. Now six Saturday appointment slots are reserved for the pilot program participants each week.

Since the pilot program started, there has been a change in the screening age that is used. Consistent with varying opinions in the literature, there has been an ardent dialogue between practitioners to agree on a lower age limit for the screening clinic. The age criteria was recently changed to a lower age limit of

45, plus the woman must satisfy the other criteria in order to get an appointment at the pilot clinic. The Chief of Radiology has proposed that the pilot project use a lower limit of age 50, in order to facilitate the most effective screening clinic.

While working in a bureaucracy is not inherently negative, it was very difficult for a single health care provider to communicate to all involved parties without assistance. The productivity of this one physician could greatly be increased with the assistance of just one clerical person. This seems especially critical in light of the unique position of this clinic and the on-going education and communication demands. Also, there is only one certified mammographer on the hospital staff to read the exams, who also has the duties of the chief of the department.

In organizing care for a patient, a patient's journey weaves horizontally through a system based in a vertical hierarchy. The MAMC organizational chart (Figure 1) depicts a vertical path where information and communication flow within a defined hierarchial

system. However, it is essential to appreciate the importance of the horizontal dimension across the organization, when a project such as this is attempted. The concept of this program was a change from the usual way of doing business and thus a departure from the status quo. Major institutional impediments were encountered such as fear, anxiety, territorial behaviors, personal agendas, and a system organized toward the care of the acutely ill, not early detection.

While awaiting word on funding for the pilot clinic, many divergent items referring to cancer services were distributed to Dr. Holt and her time was dispersed in many different directions. She organized the first MAMC Breast Cancer Symposium and assisted with the hospital review by the American College of Surgery. She has participated in various informative programs including educating local school children about cancer, and assisting the community post-mastectomy outreach program. She has coordinated with various foundations, including the Henry M. Jackson Foundation, with attention to support medical research

and to foster cooperative relationships between the federal medical community and the private sector. She is also involved with a team to formulate institutional clinical pathways for cancer patients, specifically looking at post-mastectomy patients and MAMC length of stay data compared to the civilian sector and other military medical facilities. She has recently been involved in planning a breast cancer screening program for the workplace.

She has worked closely with various foundations in looking into ways to procure funding for research and investigation at MAMC. For example, she has opened up dialogue with the Battelle Scientific Group in tying our institution with industry. Also, she has functioned as a liaison in helping to coordinate the use of stereotactic fine-needle breast aspiration at MAMC.

The MCI concept has made progress and is organized toward common goals. The programmatic thrust is concentrated in four areas: cancer prevention and early detection, multi-disciplinary critical care pathways, follow-up and rehabilitation, and clinical

and basic research. The three dominant themes of the MCI are cooperation, innovation, and regionalization. The initial steps in the area of cancer prevention and early detection have been addressed with the pilot breast screening clinic. The MCI concept, once functional, can serve as an prototype to other federal and military institutions.

V. CONCLUSIONS AND RECOMMENDATIONS

The MAMC project can be considered a success because there is currently a functioning breast cancer screening program, and a 71 year old patient with cancer has been diagnosed from the asymptomatic screening clinic. Unfortunately the expansion of the project has been limited by funding, space, and personnel. The pilot program detection rate of 14.705 to 15.15 per 1000 women screened falls within the results

While initially anticipated to provide a model for other military screening programs, the program has not expanded to this degree. There has been slow but evolving progress in the organization of the project, such as team building and movement toward a unified

vision. The Cancer Committee has matured and organized its focus over the past few months. Ultimately, the grand scheme visualized by the commanding general calls for a group, ideally the Cancer Committee, to orchestrate, consolidate and oversee the currently fragmented pieces of the total care of cancer patients into one governing body to make recommendations to the Executive Committee. Once the committee is structured and functioning adequately, a tri-service entity could be developed to include a regionalization mission.

In light of current breast cancer statistics and the positive patient response, there is a need to continue to provide these services. It is important to continually assess and attempt to meet the needs of customers. This program has value-added because it satisfies the customers needs. One difficulty is overcoming the antagonism that can build up between different hospital populations and get them working together in a common interest- the interest of the patient.

Making and maintaining a commitment is an important prerequisite of any preventive program. The success of

the project thus far is due to reallocation of current internal resources, volunteer personnel, and continual communication and coordination efforts. Additionally, a Saturday mammography technician was hired as part of a Radiology staffing action. For MCI vision attainment, there must be dedicated personnel and resources to staff this program. A funded business plan and dedicated budget is needed.

The literature contends that the paradigm of diagnosis and treatment will be replaced by one of prediction and early-stage management of illness. This means the time for action in the preventive arena has come. We must seize the opportunity to be creative and look at our beneficiary populations, assess the major medical problems, and create innovations in prevention and early detection to save dollars and enhance the quality of life.

However, the current reimbursement system is a barrier to hospitals who want to provide a continuum of care including keeping people well. Hospitals must be rewarded for keeping patients healthy and out of the hospital. The era of cost containment demands a look

into the cost benefit of health promotion strategies. Strategic intent focuses attention on saving money before patients enter the hospital. Currently, military facilities are unable to accept Medicare and Medicaid funds which limits reimbursement sources, but this may be changing in light of health care reform.

Cancer control is a high risk arena fraught with many potential pitfalls in technology, quality assurance, physician experience, communication, and the involvement of different sub-specialists. It is essential to be good stewards of care for our beneficiaries and coordinate health care in a compassionate, cost-effective manner. Present evidence that detection of early breast cancer results in increased survival makes it imperative to organize effective screening activities.

There are multiple reasons why the MAMC breast cancer screening pilot program has not been as successful as anticipated. In devising a checklist for future cancer screening projects, the essential elements for a successful implementation are listed:

1. Leadership commitment

2. Funding available prior to program implementation
3. Adequate program personnel
4. Organization consensus and commitment
5. Staff preparation for paradigm shift
6. Allocation of space
7. Project organization with communication and coordination
8. Periodic, planned mapping of program progress

These are essential elements in the successful implementation of a breast cancer screening program. All elements are important in helping to achieve success. With access to cancer screening and detection services, significant cost savings can be realized in terms of less costly treatment, reduced hospital days, better clinical outcomes, and reduced mortality. It is time to re-shape our thinking, manage our resources, communicate effectively, and utilize proven preventive strategies.

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ORGANIZATIONAL CHANGE

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Figure Caption

Figure 1. MAMC Organization Chart

MADIGAN ARMY MEDICAL CENTER

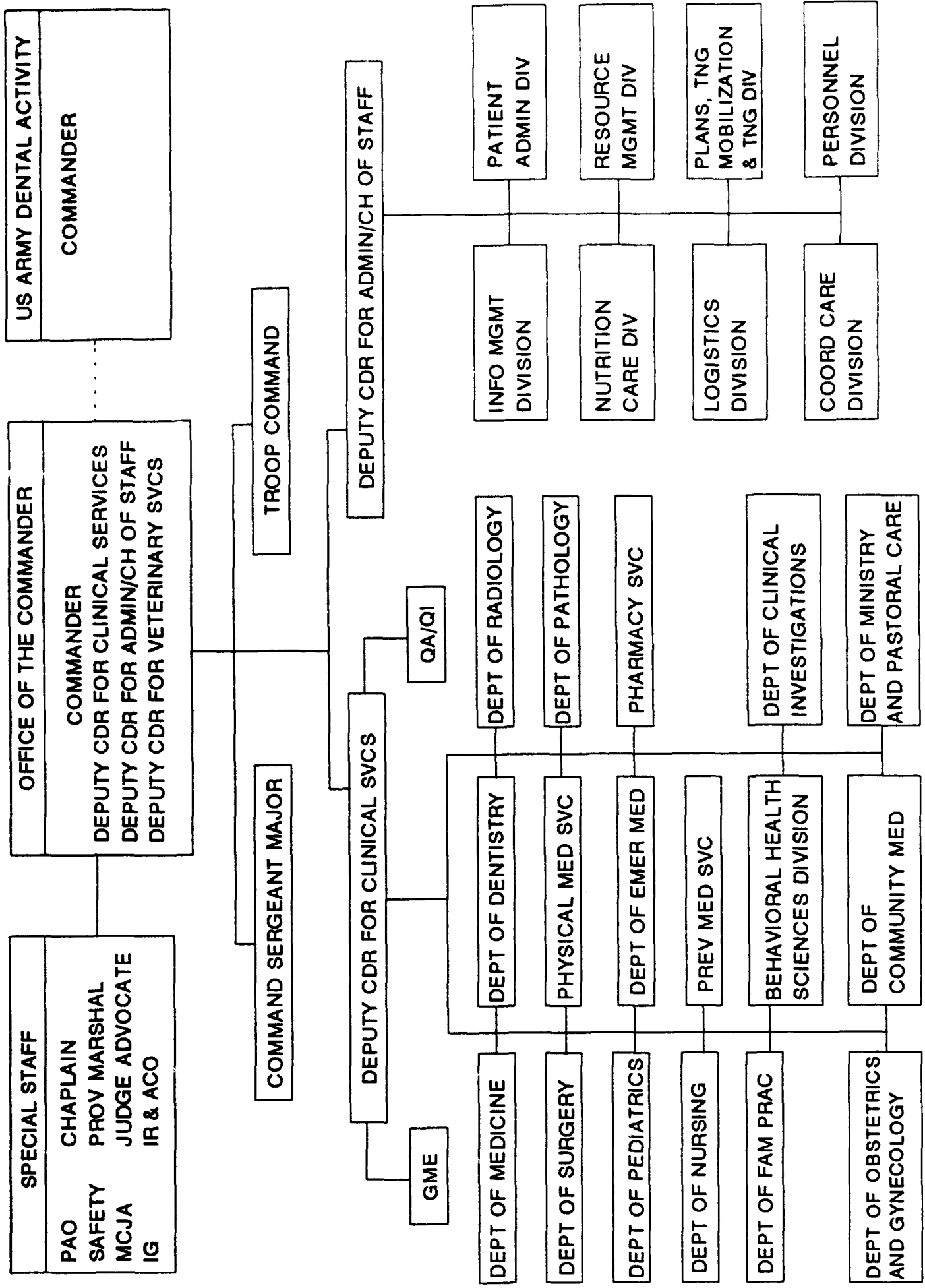


Figure Caption

Figure 2. Percent MAMC Female Beneficiaries by Age
Group as of May 1, 1993 (T= 54,102)

Madigan Catchment Area

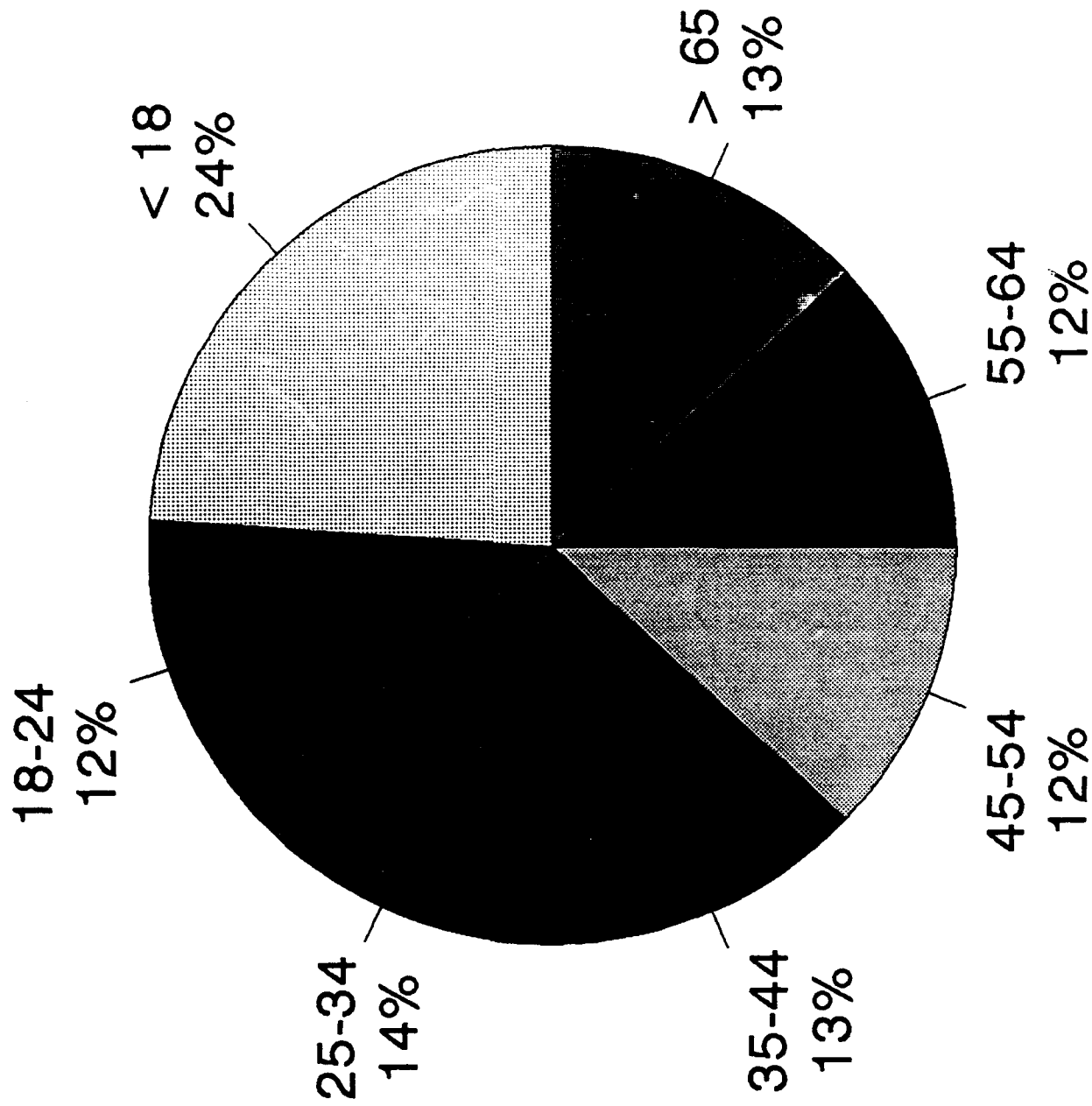


Figure Caption

Figure 3. Women's Health Screening Process

Note. From Lieutenant Colonel Martha Lupo, Army Nurse Corps, Chief- Utilization Management Branch, Coordinated Care Division, MAMC, 1993. Reprinted by permission.

Begin



Routine Female Exam

★ Breast exam

★ Pelvic exam

★ Pap smear

★ Blood pressure

★ Hemocult

Points of entry:

GYN Clinic

Family Practice

Pilot Screening

Clinic

Pediatrics

TMCs

NO

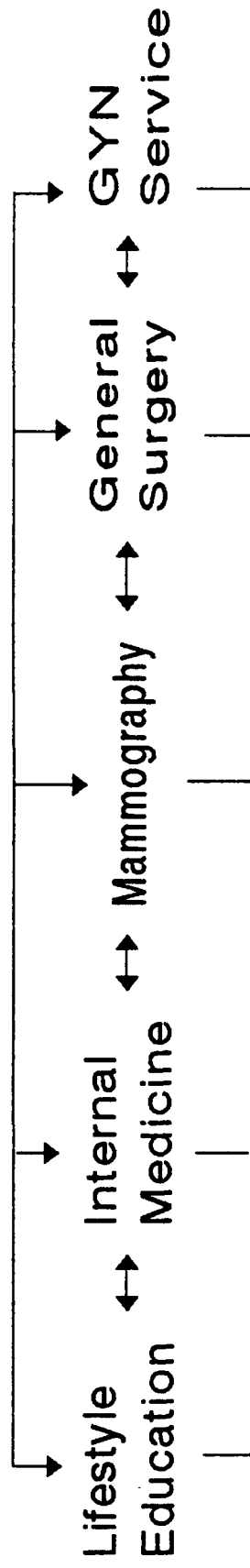
Referral
needed?

YES

Pap Normal?

NO

YES



End

Figure Caption

Figure 4. Meta-Analysis of Mammography Screening
Studies

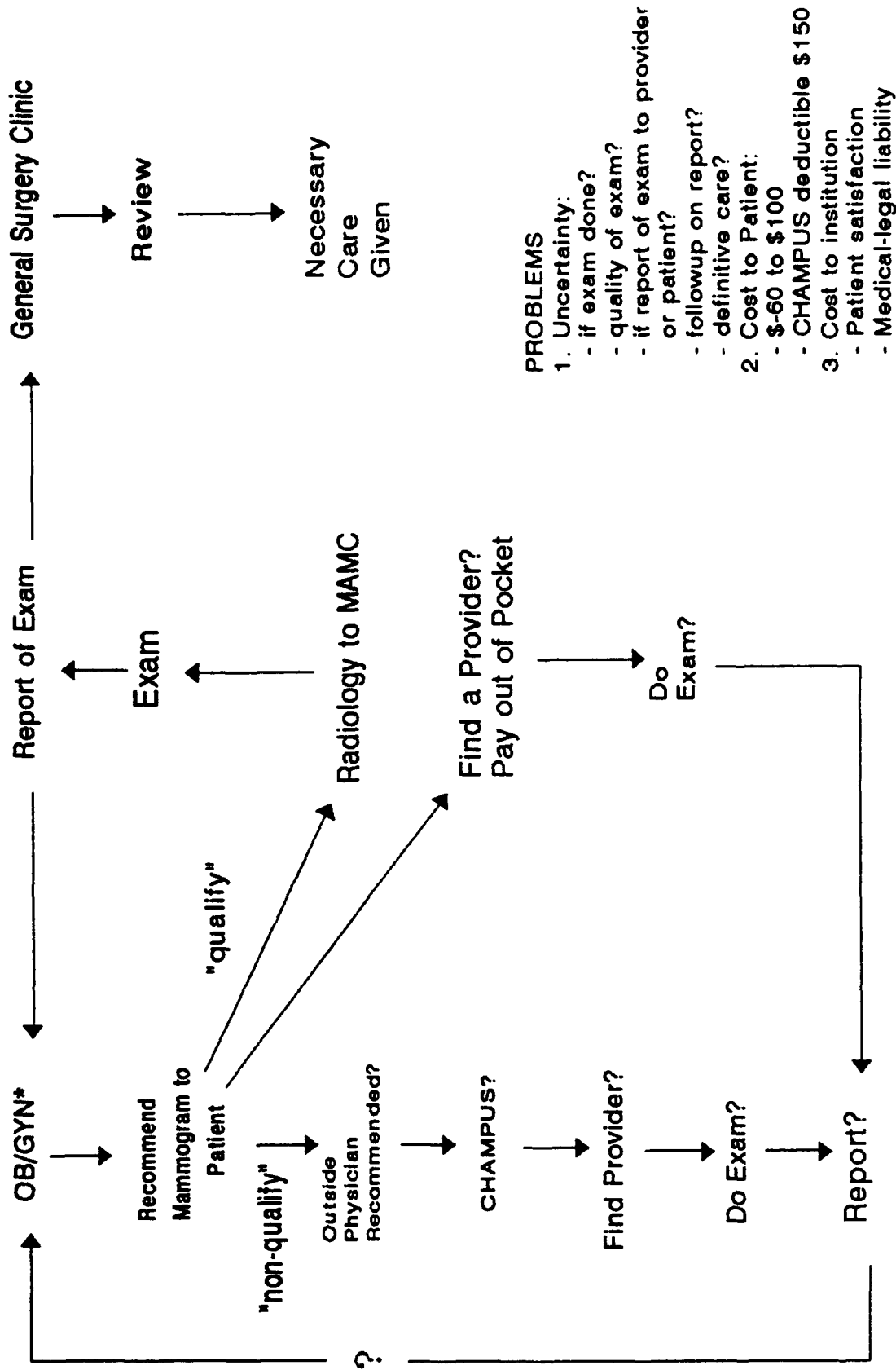
Author	Place/Date	Mammo- graphies	Cost	Cancer Detected	Detected per 1000 screened
Shapiro et al., 1990 (HIP)	New York Dec 1963- Mar 1985	9,883	-	23	2.3
Baker 1982 (BCDDP)	27 U.S. locations 1973-1981	283,222	-	4,443	15.7
Margolin 1989	San Francisco, CA 1974-1988	37,774	-	695	18.3
Tiftt et al., 1988	Canton, OH Private Practice 1983-1987	6,109	\$13,000/per cancer detected	56	9.1
Carter et al., 1987	Seattle, WA Mar-Dec 1985	3,383	5-yr savings = \$88,291	22	6.5
Bird 1989	Charlotte, NC Aug 1985- Dec 1987	21,716	\$28/exam	142	6.5
Cyrlak 1988	Orange County, CA Feb-Mar 1986	2,261	\$25,500/per cancer detected	12	5.3
Bassett et al., 1989	Southern CA 1986-1988	18,264	\$50/exam	-	-
Zavertnik et al., 1992	Dade County, FL Nov 1987- Dec 1990	11,871	\$40/exam	58	4.9
Totals		376,219		5,451	14.5

Note. Dash signifies subject not addressed in article

Figure Caption

Figure 5. Present Mammography System

Note. From Dr. John Read, Chief- Department of
Obstetrics and Gynecology, MAMC, 1993. Reprinted by
permission.



* or other primary provider
(TMC, Family Practice, Medicine, Surgery)